

# VR290

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Color Video Monitor  
Installation/Owner's Guide

**digital**<sup>TM</sup>



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Installation/Owner's Guide

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# INTRODUCTION

This guide describes how to install and maintain your VR290 color video monitor.

You can use your VR290 monitor with VAX workstations that have the appropriate color interface installed.

Do the steps in sequence. You should take about 15 minutes to connect the monitor to your host system.

## **Before You Start**

Your host system affects the way you prepare to operate your monitor. Refer to the manuals for your host system and its options for the following information.

- Must any option module be installed in the host system to support your monitor?
- Do you have your monitor's signal cable?
- What are the codes to access host test patterns?

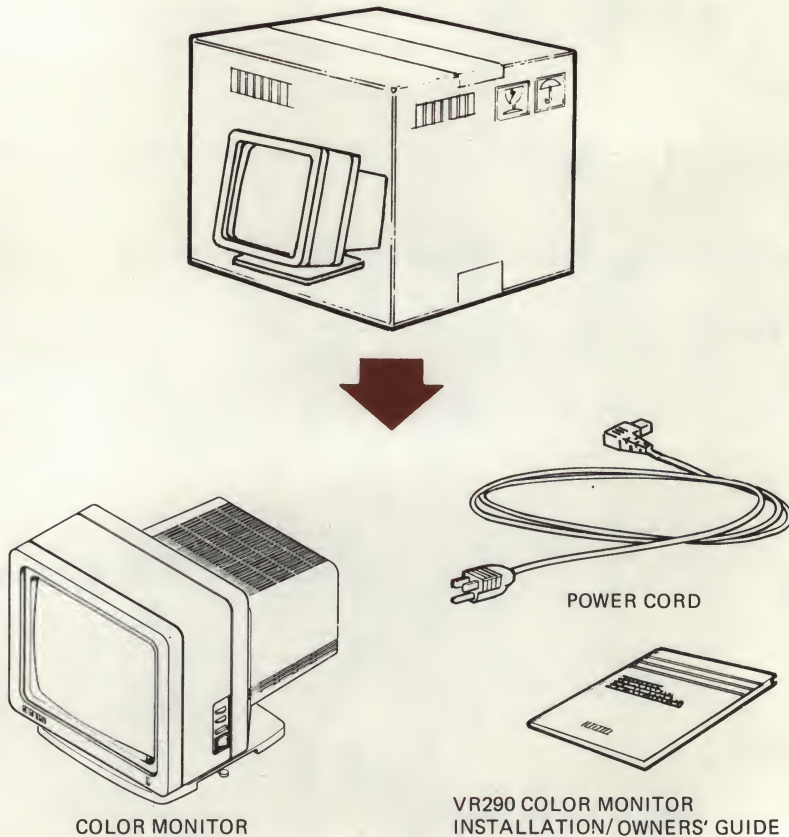
# UNPACKING

## Unpack the carton and check the contents.

**NOTE:** The power cord may be supplied separately.

**CAUTION:** This procedure requires two people. The monitor weighs 80 pounds (36 kilos).

**CAUTION:** To avoid damaging a monitor that has been moved inside from a cold environment, let it warm to room temperature before you turn it on.



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## **Missing or damaged items?**

Contact your sales representative and delivery agent.

## **When you need help . . .**

Call Digital Equipment Corporation. See page 23 for the correct phone number. Be ready to report the model number and serial number of your monitor.

## **Avoid damage to your diskettes.**

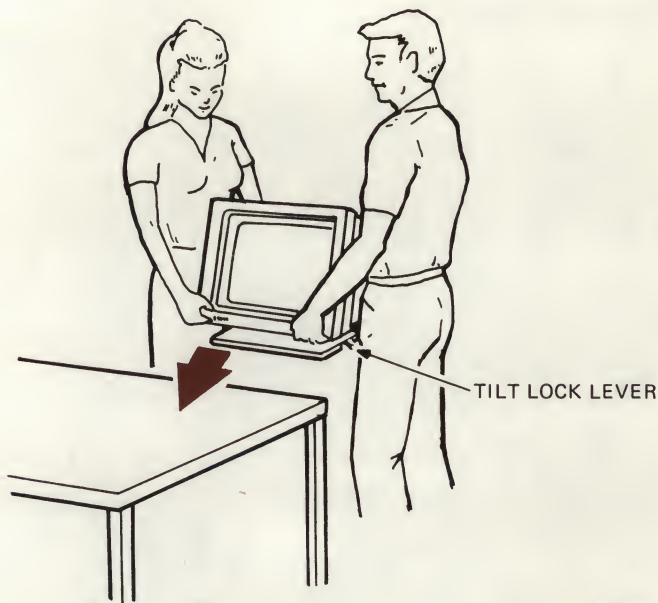
The electromagnetism from your monitor may damage diskettes by distorting or erasing the magnetic patterns. Do not place any magnetic media on or near your monitor.

# INSTALLATION

## Place the monitor on a level surface.

**CAUTION:** This procedure requires two people. The monitor weighs 80 pounds (36 kilos).

**NOTE:** Make sure the tilt lock lever is on the right side when viewed from the front.

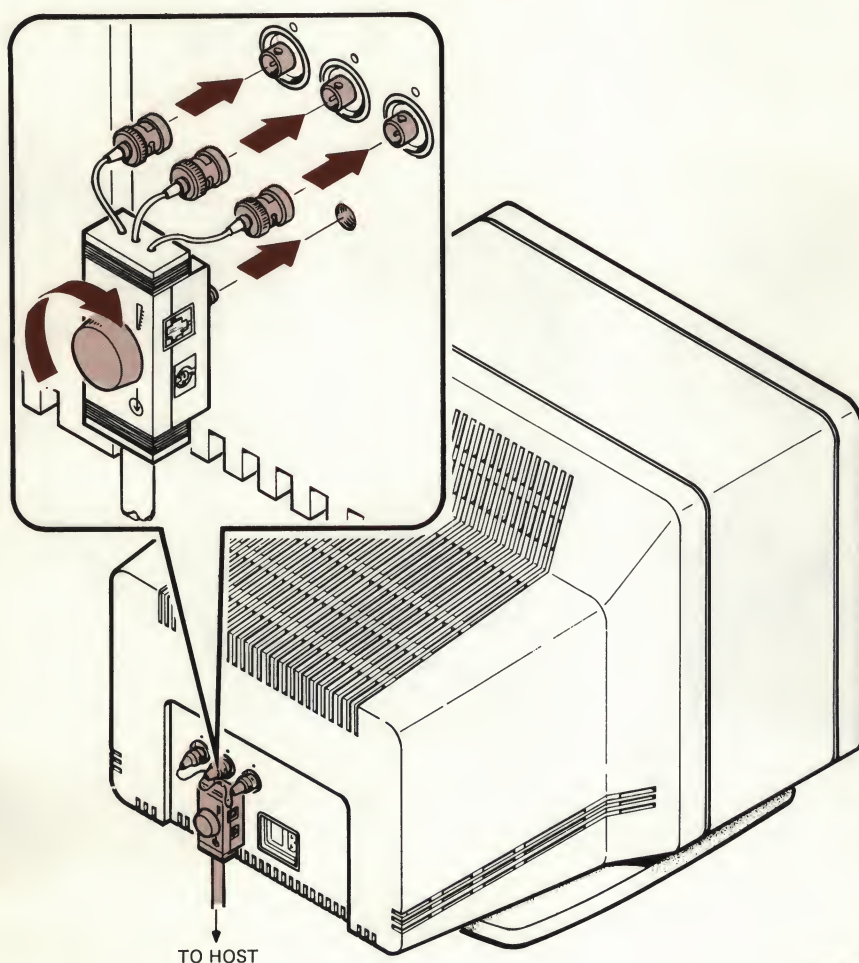


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**Screw the signal cable into the monitor, then connect the R, G, and B cables (push in and turn clockwise).**

*NOTE: If your host system needs a color option to work with your monitor, make sure the option is installed and your host system is turned on.*

The signal cable is ordered separately. Refer to your host system documentation for information.

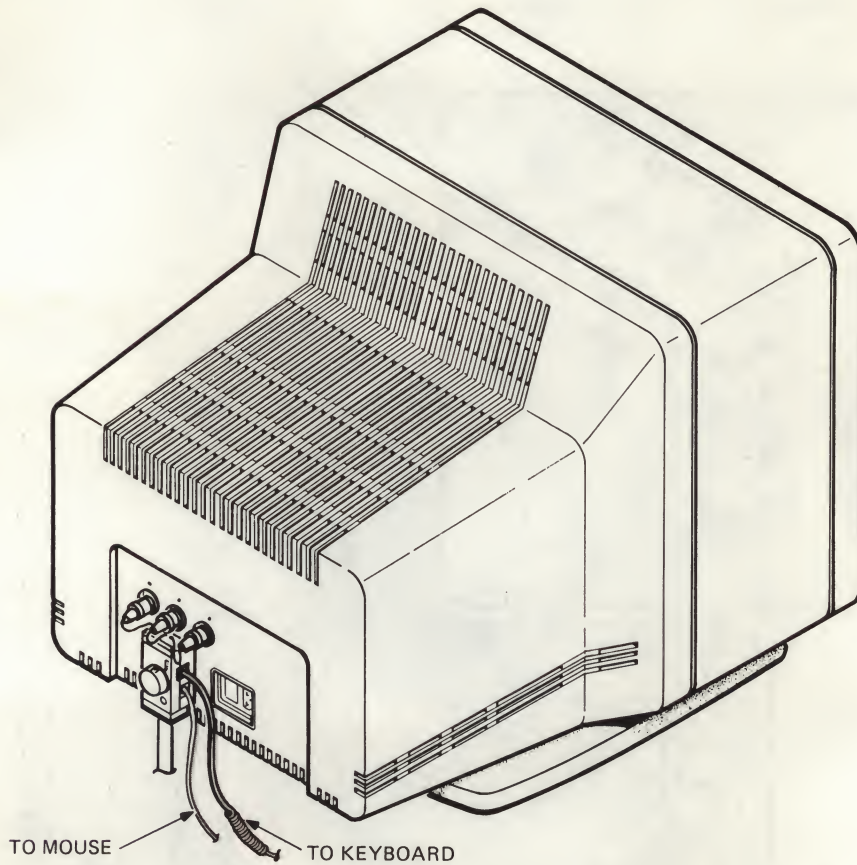


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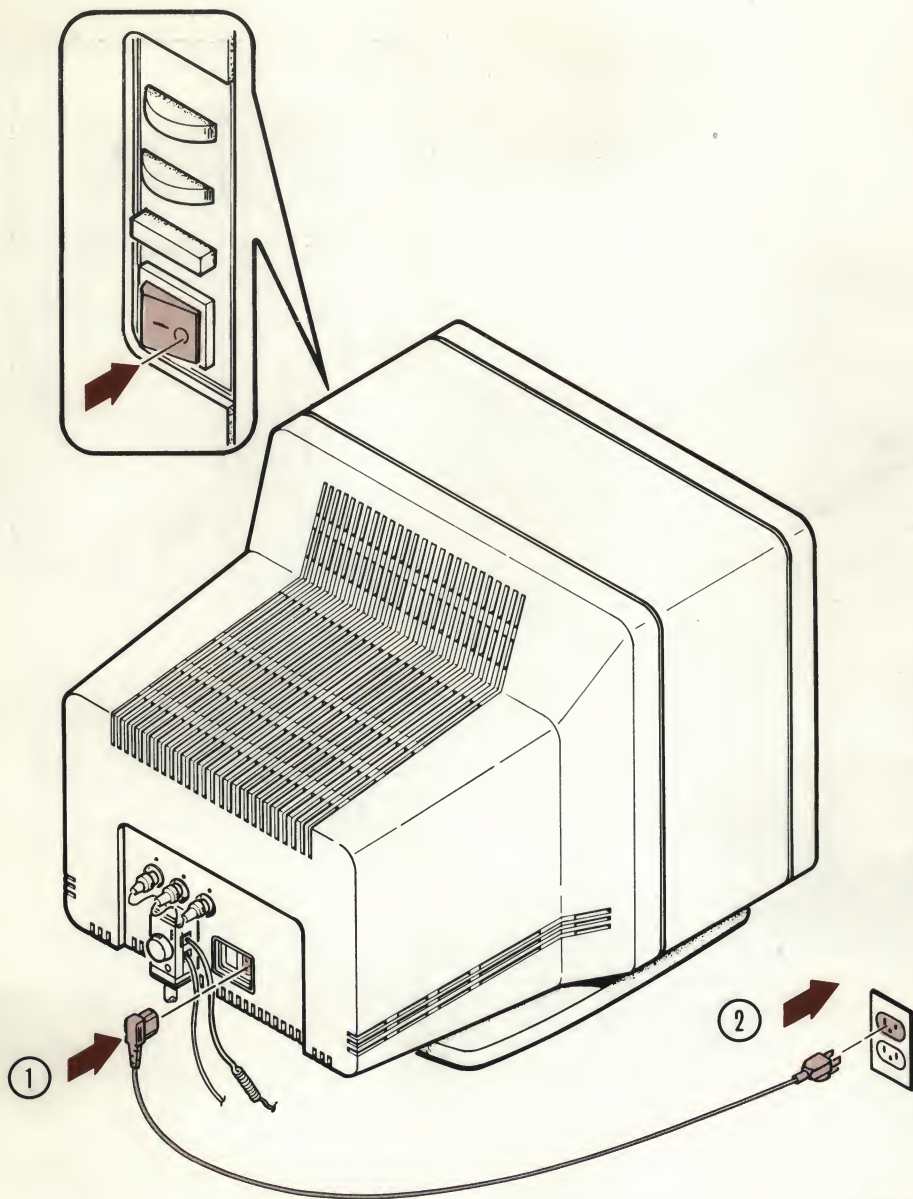
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**Connect the keyboard and mouse to the signal cable.**



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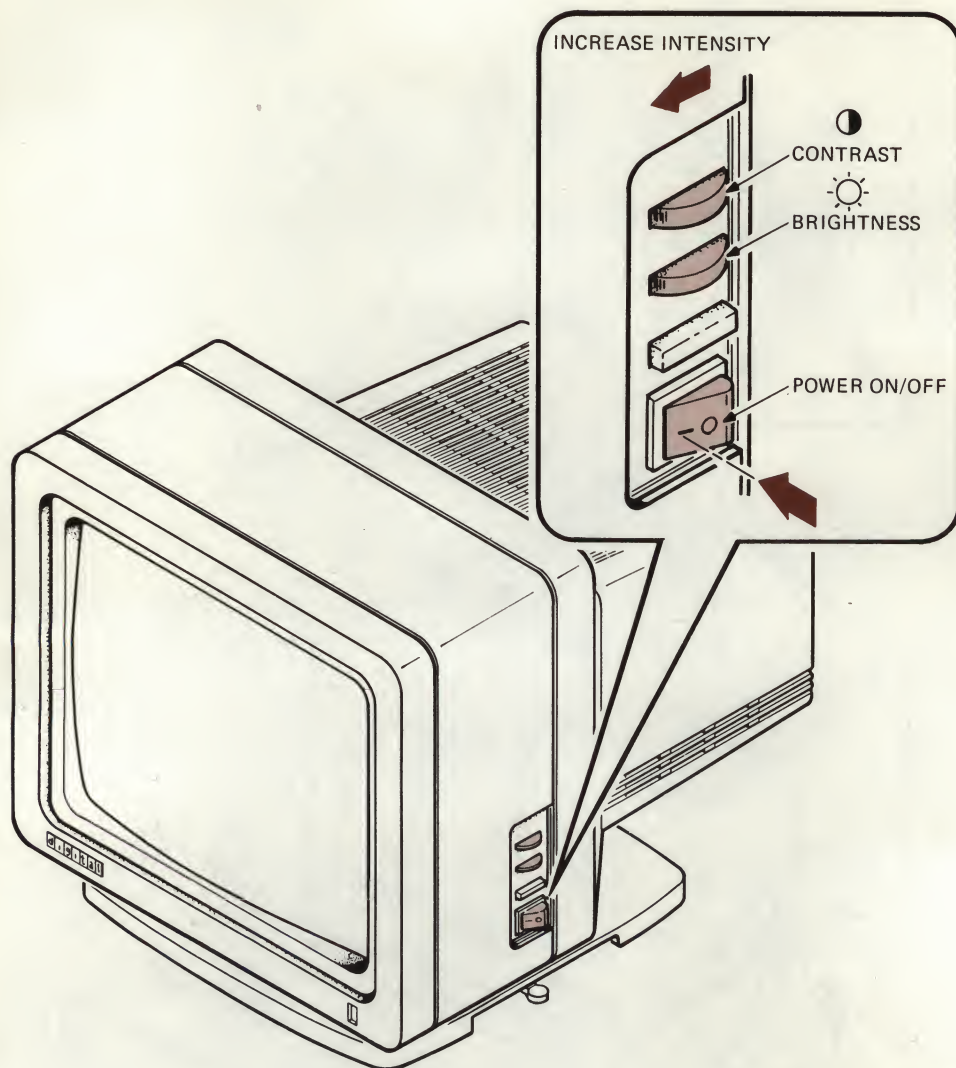
Set the power switch to 0 (off) and connect the power cord.



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**Set the power switch to 1 (on) and turn the brightness and contrast controls to maximum (toward the front).**

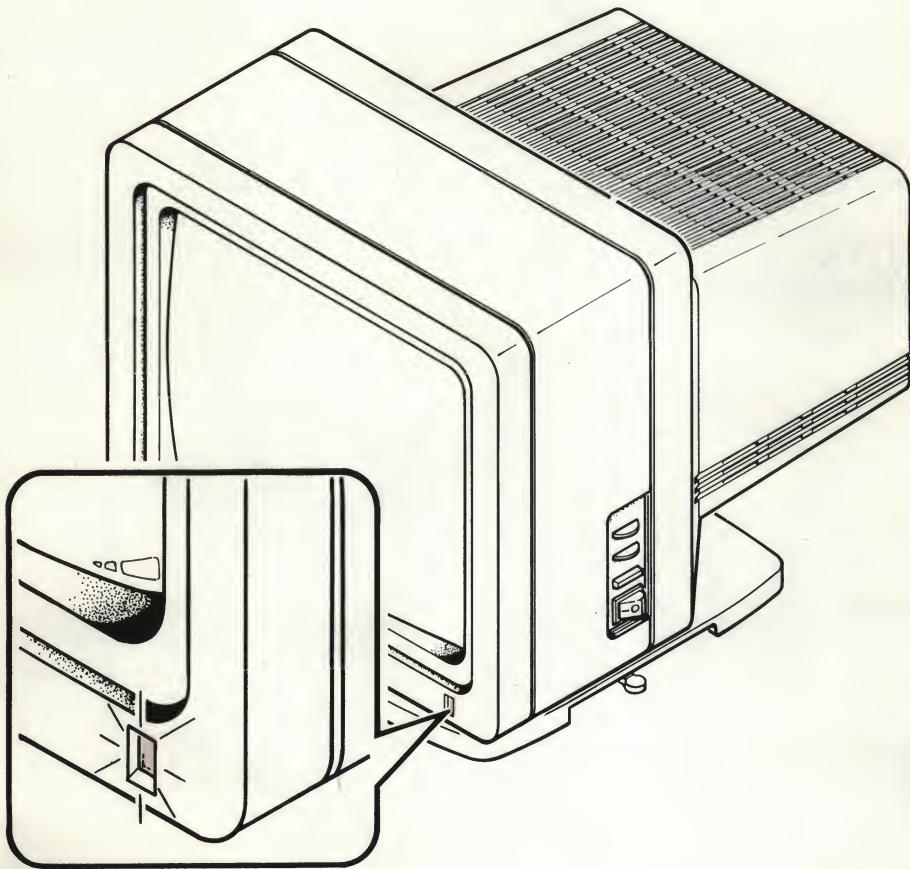


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## Watch for the green power indicator to go on.

*NOTE: Wait about 30 seconds for a video display to appear. If the green power indicator does not go on or if a video display does not appear, go to the "Correcting Simple Problems" section (page 18).*



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# OPERATION

## Controls

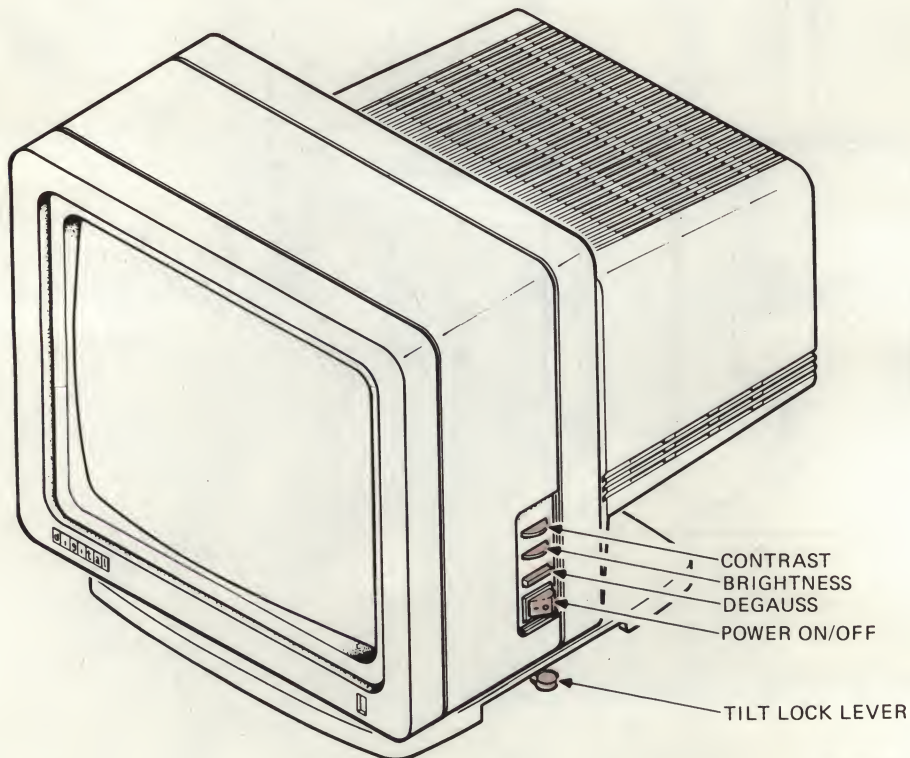
**CONTRAST** – Lets you adjust the video display to a suitable intensity.

**BRIGHTNESS** – Lets you adjust the video raster (background intensity) to compensate for ambient light in the room.

**DEGAUSS** – Lets you clear the color picture distortion caused by external magnetic interference.

**POWER ON/OFF** – Turns the monitor on and off. Turn off the monitor at the end of the workday to help avoid maintenance problems.

**TILT LOCK** – Locks or unlocks the tilting mechanism to allow or prevent movement; swivel operation is not affected.

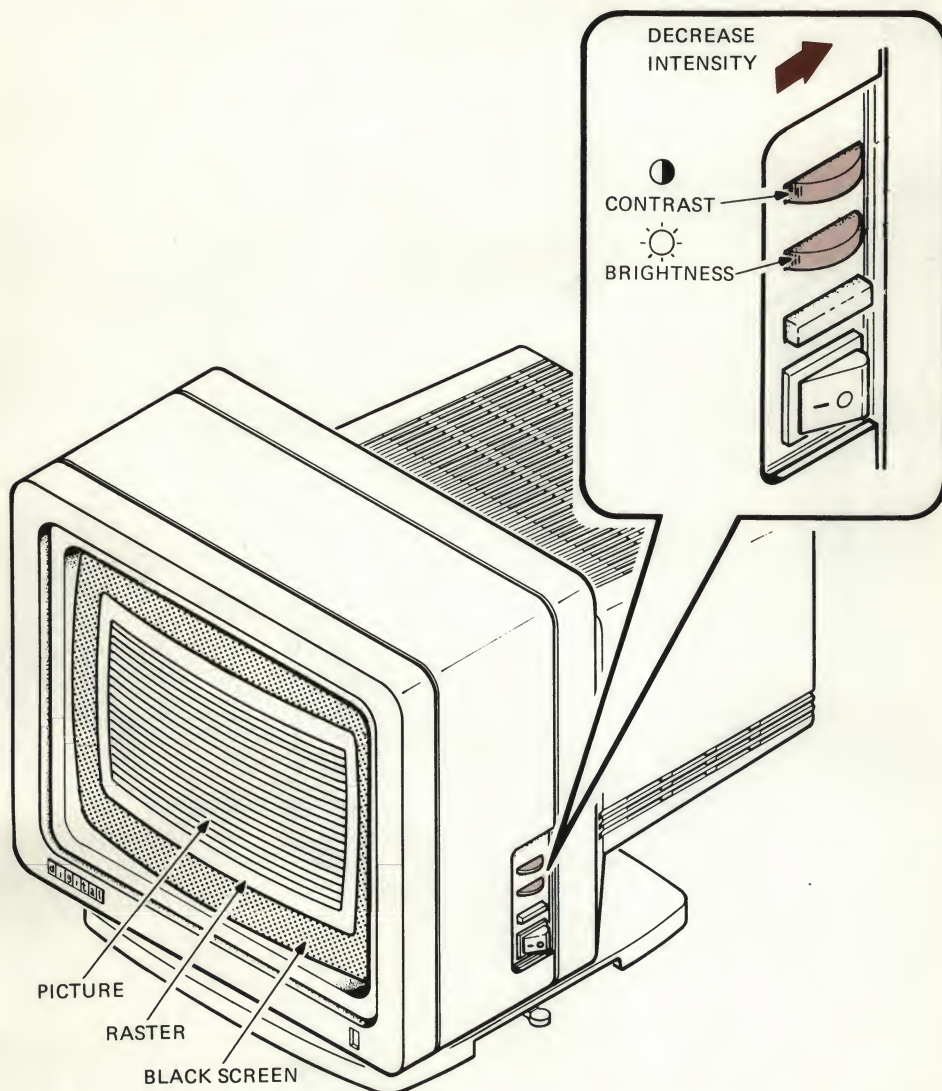


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## Brightness and Contrast

1. Turn the contrast to its minimum setting.
2. Adjust the brightness until the raster just disappears.
3. Adjust the contrast to your viewing preference.

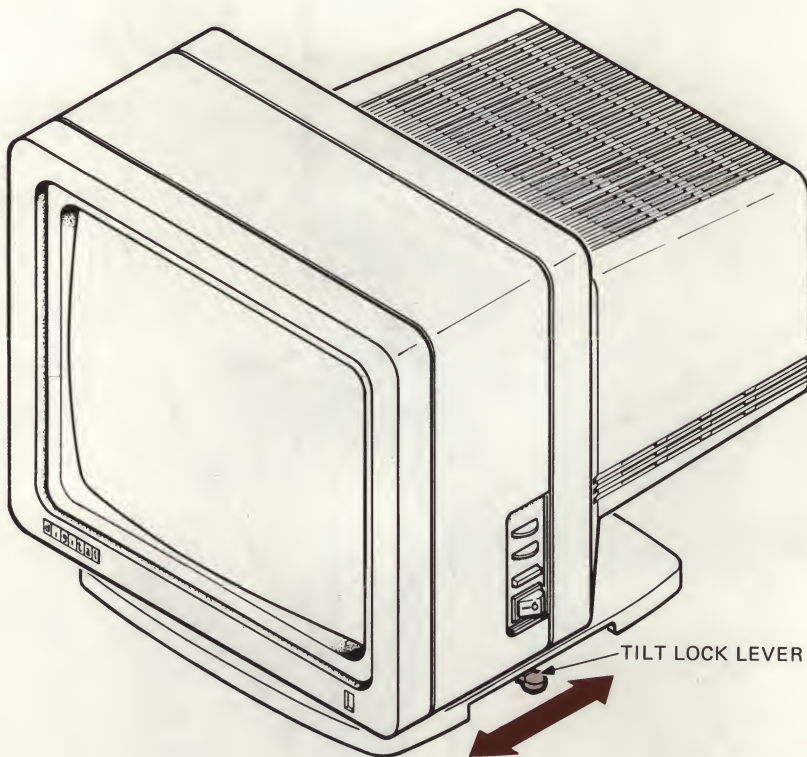


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## Tilt

1. Slide the lever away from you (toward the back) to unlock.
2. Position the monitor to the desired tilt.
3. Slide the lever toward the front to lock.

**NOTE:** *The monitor is free to swivel about its base and maintain the tilt angle.*



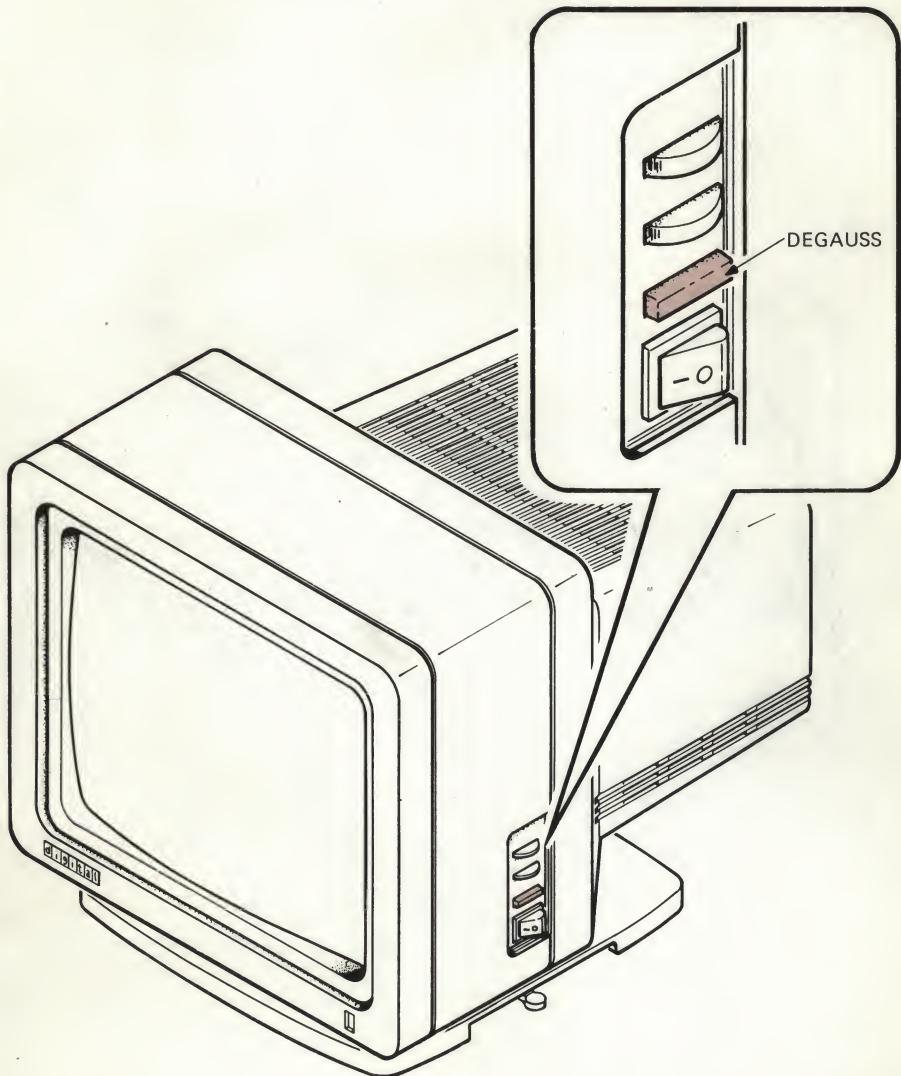
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## Degauss Switch

The monitor may show signs of poor color purity after swivel action. Momentarily pressing the degauss switch corrects the color distortions.

*NOTE: If you need to press the degauss switch again, wait 10 minutes to allow the circuit to reactivate.*



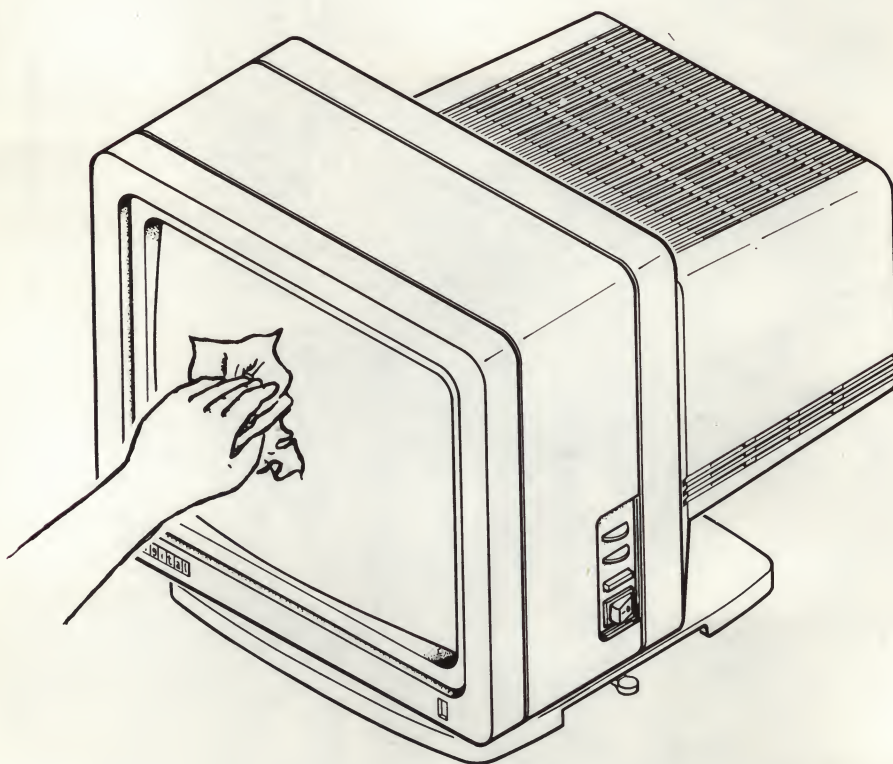
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# MAINTENANCE

## Cleaning the Screen

Clean the screen with the Digital approved screen cleaning kit (Digital Part Number VT1XX-KF).

**CAUTION:** *Before cleaning the screen, turn your monitor off and wait 30 seconds to let static electricity dissipate.*

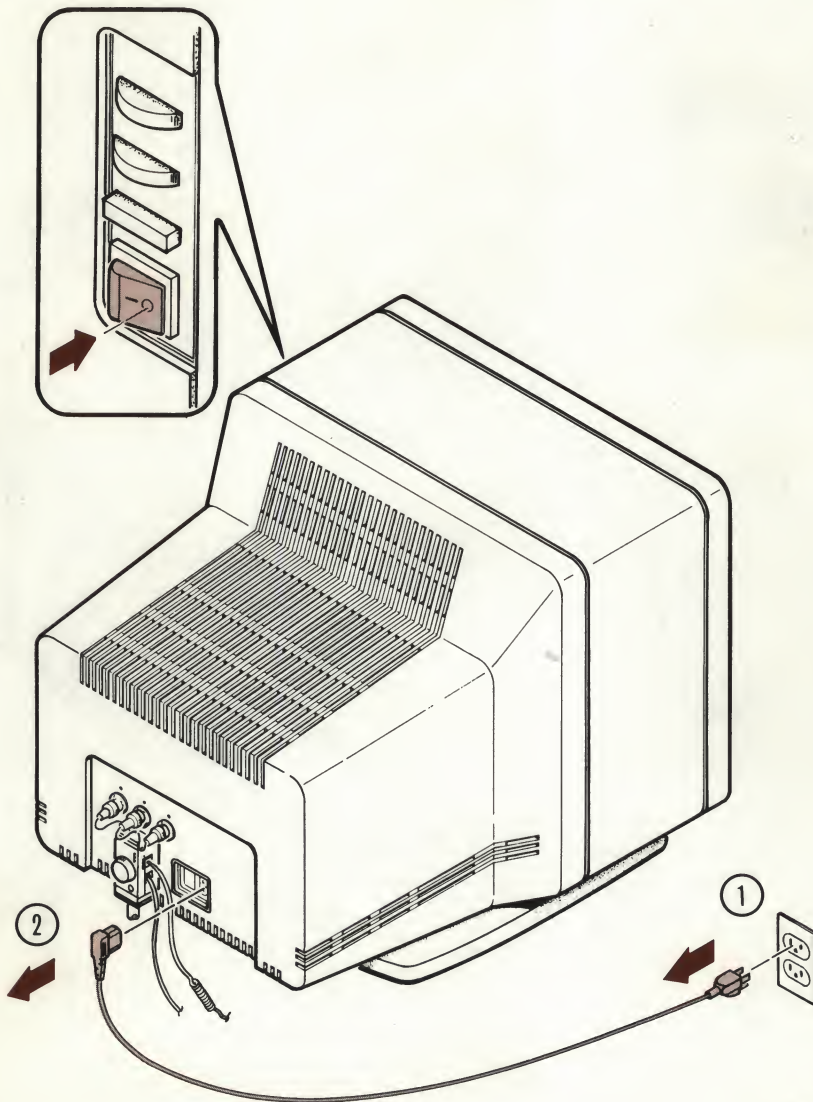


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## Replacing the Fuse

Your monitor has a 2 amp, 250 volt slow blow fuse, PN 12-14676-04 (Europe: T2A-250 volt PN 12-19283-03).

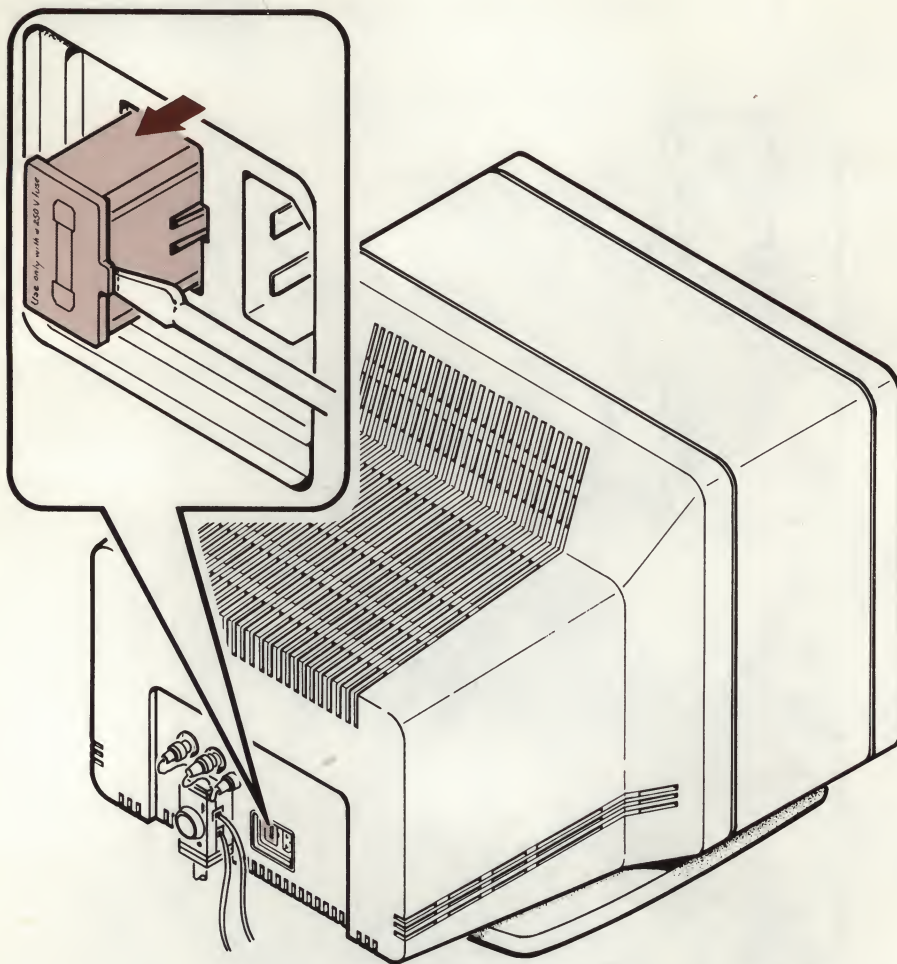
1. Turn off the power switch and wait 10 seconds; then unplug the power cord.



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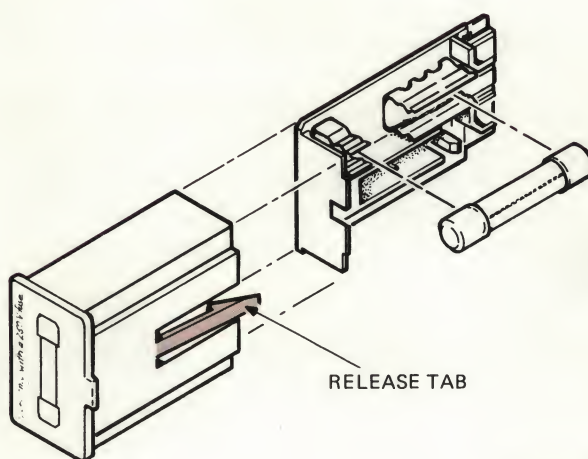


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2. Carefully pry out the fuse carrier with a screwdriver.



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3. Pull out the carrier, release the inner fuse holder, and replace the fuse.



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## Correcting Simple Problems

Problems may come from two sources: your host system or your monitor. The following troubleshooting techniques deal with monitor problems.

Use the "Correcting Simple Problems" table as follows.

1. Note the symptoms of the problem.
2. Check the "Symptom" column for a match.
3. Check the conditions in the "Possible Cause" column.
4. Follow the advice in the "Suggested Solution" column.

If you perform all the suggested solutions and still cannot correct a problem, go to the "Repairs" section. That section lists telephone numbers you can call for service. The section also describes available repair and support services.

*NOTE: Refer to your host system manuals to call up diagnostic test patterns.*

## Correcting Simple Problems

Symptom	Possible Cause	Suggested Solution
Green power indicator on front of monitor does not come on when you turn on monitor.	Power cord is not connected to monitor or wall outlet.	Reconnect power cord to monitor and wall outlet.
	No power exists at wall outlet.	Check outlet by plugging in lamp.
	Monitor fuse is blown.	Replace fuse.
	You performed all above steps once, but the problem was not corrected.	Contact a service engineer.
Screen is blank (no raster), but green power indicator on front of monitor is on.	Brightness and contrast controls are turned down.	Turn brightness and contrast controls up.
	Monitor is faulty.	Contact a service engineer.
Screen goes blank after monitor was left on and inactive for 30 minutes. Green power indicator on front of monitor is on.	Host system's CRT (cathode-ray tube) saver feature is activated.	Press any key to reactivate display.
Screen goes blank after successful power-up. Green power indicator on front of monitor goes off.	Monitor fuse is blown.	Replace fuse.
	Monitor is faulty.	Contact a service engineer.

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### Correcting Simple Problems (Cont)

Symptom	Possible Cause	Suggested Solution
You have raster, but no cursor or test pattern appears.	Signal cable is disconnected.	Connect cable between monitor and host system. Refer to "Installation" section of this guide and to host system manuals.
	Host system is not on.	Turn host system on.
	Contrast is set to minimum.	Turn contrast control to maximum.
	Host system's CRT saver feature is activated.	Press any key to reactivate display.
	Host system, monitor, or cable is faulty.	Contact a service engineer.



### Correcting Simple Problems (Cont)

Symptom	Possible Cause	Suggested Solution
Screen display is distorted, rolling, or flickering.	Video cables are connected incorrectly.	Check cable connections on the monitor and host system. Connect cables as shown in this guide's "Installation" section.
	Monitor or system is faulty.	Contact a service engineer.
Color is not even over complete screen (poor color purity).	Electromagnetic interference exists.	Momentarily press degauss switch. After 30 seconds recheck purity.
		Move any electro-mechanical device away from monitor, or move monitor.
	Monitor is faulty.	<i>CAUTION: Before moving the monitor, turn it off and wait 30 seconds to allow static electricity on the CRT to discharge.</i>
		Contact a service engineer.

# REPAIRS

## How to Get Service

Digital has a central service center in your area to help you keep your system running with a minimum of trouble.

### Before you call:

- Check the problem solving tables. Often you can solve the problem yourself.
- Write down your monitor's serial and model number. The serial number is on back of the monitor.
- Be ready to identify your host system.
- Summarize the problem. Make a note of what you were doing when the system failed. Also note whether the power indicator went off, or if you heard any new sounds just before or after the system failed.



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### When you call:

- Stay near the system and the monitor.
- Have all your materials available. The Field Service engineer may ask you to recreate the problem.
- Call Digital at one of these telephone numbers.

United States	(800)554-3333
Australia	(02)4125555
Austria	(222)6776410
Belgium	(02)2425095
Canada	(800)267-5251

Denmark	(2)889666
Finland	(0)423511
France	(6)0778292
Holland	(30)640293
Ireland	(1)308433

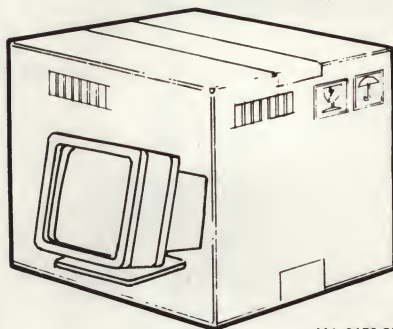
Italy	(02)617961
Japan	(03)9897161
New Zealand	(09)595914
Norway	(2)160290
Portugal	(1)725402

Spain	(1)725402
Sweden	(8)7338000
Switzerland	(01)8169111
United Kingdom	(734)868711
West Germany	(089)95910

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## Repacking the System

If you have to return the monitor to Digital for service, place the monitor in the same container in which it was shipped.



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## Digital's Services

The warranty on your monitor gives you access to Digital's technical expertise, spare parts inventories, and worldwide service. After warranty, Digital's support continues through the following on-site and off-site service alternatives.

### DECservice

DECservice is the most comprehensive on-site service. DECservice provides committed response times, including a 4-hour service response if your system is within 100 miles of a service location. It provides continuous repairs until the problem is solved, a program of preventive maintenance, installation of the latest engineering changes, and automatic service escalation for complex problems. DECservice is available up to 24 hours a day, 7 days a week.

### Basic Service

Basic service is an economical, full service coverage. Your calls for service receive priority status, second only to DECservice calls. You receive preventive maintenance, installation of the latest engineering changes, and automatic service escalation for complex problems. Basic service is available during standard business hours, Monday through Friday.

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### **Per Call Service**

Per call service is available on-site and off-site on a noncontractual basis during standard business hours, Monday through Friday.

For on-site per call service, you pay for the time and materials required for each service call. Off-site per call service is available through mail-in board replacements and carry-in system repairs.

### **Carry-in Service**

Carry-in service is the low cost alternative to on-site support. You can carry your monitor into any U.S. Digital Servicenter and pick up the repaired system within two days. Or, if you perform your own maintenance, you can carry in a faulty module and Digital will make an over-the-counter exchange. Carry-in service is available through a one-year, fixed-cost agreement or on a per call basis for which there are flat rate charges for labor plus the cost of all parts used in the repair. All carry-in service and parts come with a 90-day warranty.

### **DECmailer Service**

DECmailer is a return-to-factory replacement service for customers who maintain their equipment to the module or subassembly levels. DECmailer service provides 5-day turnaround, free return shipping, 90-day warranty, 24-hour emergency service, monthly billing and quarterly activity reports.

### **Spare Parts**

Digital's Customer Spares organization provides support in the following areas.

- Spares inventory planning
- Maintenance test equipment
- Documentation
- Emergency spare parts

For more information about any Digital service, call the appropriate service number listed in this guide.



# SPECIFICATIONS

## Physical

Height	18½ in (47 cm)
Width	20 in (51.8 cm)
Depth	21½ in (54.6 cm)
Weight	80 lb (36 kilos)

<b>Picture Tube Size (Diagonal)</b>	19 in (480 mm) viewable
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<b>Video Format</b>	RGB color Composite video
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<b>Display Characteristics</b>	0.31 mm dot pitch with high efficiency antiglare treatment
.	1024 (horizontal) × 864 (vertical) giving approximate picture size of 326 × 275 mm

## Timing

Vertical rate	60 Hz (typical)
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Horizontal rate	54 kHz
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<b>Video R and B Input Signals</b>	0.7 Vpp/75 Ohm
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<b>Video G Composite Signal (with Sync)</b>	1.0 Vpp/75 Ohm
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**Power**

AC input                      88–132 Vac 50/60 Hz  
                                    185–264 Vac 50/60 Hz

Power consumption            150 W (nominal)

**Fuse**                            2 A, 250 V slow blow, U.S. PN 12-14676-04  
                                    (T2A-250 V, European PN 12-19283-03)

**External Controls**            Brightness  
                                    Contrast  
                                    Degauss  
                                    On/off  
                                    Tilt lock

**Operating Temperature**      50°–104°F  
**Range**                            (10°–40°C)

**Humidity**                        10%–95% relative humidity  
                                    noncondensing







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